

HUBER et al., Ser. No. 10/775,097

AMENDMENTS TO THE CLAIMS

1. (original) A process for reducing the aerosol-related discharge from a separation column in which one or more components are separated off from a gaseous or liquid starting mixture at actively separating internals, aerosols being present or formed in a gas phase in the separation column, which comprises the actively separating internals being segmented at one or more separation points, the separation point(s) being determined in such a manner that the aerosols have at least 50% of their maximum particle size at the separation point or separation points, and an internal being provided at each separation point, which internal is operated under at least partially flooded conditions, at least in partial regions of the internal a continuous liquid phase being formed to which the aerosols are bound.
2. (original) A process as claimed in claim 1, wherein the separation point(s) is (are) provided at the point (points) at which the aerosols have at least 80% of their maximum particle size.
3. (original) A process as claimed in claim 1, wherein the separation point(s) is (are) provided at the point (points) at which the aerosols have at least 90% of their maximum particle size.
4. (original) A process as claimed in claim 1, wherein the actively separating internals are segmented at one separation point.
5. (original) A process as claimed in claim 1, wherein the internal operated under at least partially flooded conditions (the internals operated under at least partially flooded conditions) only partially fills (fill) the internal diameter of the separation column.

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6. (original) A process as claimed in claim 1, wherein the internal operated under at least partially flooded conditions (the internals operated under at least partially flooded conditions) is (are) a random packing bed, an ordered packing, a tray operated with trickling layer having a continuous liquid and disperse gaseous phase, or a mesh, knitted fabric or nonwoven made of metal, plastic or glass.
7. (original) A process as claimed in claims 1, wherein the specific surface area of the internal operated under at least partially flooded conditions (the internals operated under at least partially flooded conditions) is in the range from 60 to 2 500 m²/m³ and the porosity is in the range from 85 to 98%.
8. (original) A process as claimed in claim 1, wherein an external gas, vapor and/or liquid stream is fed to the separation column downstream before the internal operated under at least partially flooded conditions (the internals operated under at least partially flooded conditions), based on the feed of the gaseous or liquid starting mixture, which external stream is controlled in such a manner that it causes the saturation or supersaturation of the gas phase in the separation column.
9. (original) A process as claimed in claim 1, wherein a defined pressure drop is generated at the internal operated under at least partially flooded conditions (at the internals operated under at least partially flooded conditions), via an external liquid feed and/or removal.
10. (currently amended) A process as claimed in claim 9, wherein the pressure drop at the internal operated under at least partially flooded conditions (at the internals operated under at least partially flooded conditions) (3) is set in the range from 0 at up to 200 mbar.

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11. (original) A process as claimed in claim 1, wherein the separation column is a gas scrubber to which are fed a gaseous starting mixture and a scrubbing liquid.
12. (currently amended) A separation column in which one or more components are separated off at actively separating extensions internals from a gaseous or liquid starting mixture, aerosols being present or formed in a gas phase, wherein the separation column is segmented at one or more separation points which are determined as defined in claim 1, in such a manner that the separation column is fitted at every separation point with an internal which is operated as defined in claim 1 and that a defined pressure drop is generated via an external liquid feed and/or removal at the internal operated under at least partially flooded conditions (at the internals operated under at least partially flooded conditions).
13. (currently amended) A separation column as claimed in claim 12, wherein the pressure drop at the internal operated under at least partially flooded conditions (at the internals operated under at least partially flooded conditions) is set ~~in the range from 0 at up to~~ 200 mbar.
14. (original) A separation column as claimed in claim 12, wherein the actively separating internals are segmented at one separation point.
15. (original) A separation column as claimed in claim 12, wherein the internal operated under at least partially flooded conditions (the internals operated under at least partially flooded conditions) only partly makes up (make up) the internal diameter of the separation column.
16. (original) A separation column as claimed in claim 12, wherein the internal operated under at least partially flooded conditions (the internals operated under at least partially

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flooded conditions) is (are) a random packing bed, an ordered packing, a tray operated with trickling layer having a continuous liquid and disperse gas phase, or a mesh, knitted fabric or nonwoven made of metal, plastic.

17. (original) A separation column as claimed in claim 12, wherein the specific surface area of the internal operated under at least partially flooded conditions (the internals operated under at least partially flooded conditions) is in the range from 60 to 2 500 m²/m³ and the porosity is in the range from 85 to 98%.
18. (original) An apparatus as claimed in claim 12, wherein the separation column is a gas scrubber to which are fed a gaseous starting mixture and a scrubbing liquid.
19. (previously presented) The process as claimed in claim 1 wherein the starting mixture is a gas stream which has a tendency to form condensation aerosols, and which comes into contact with aqueous solutions.
20. (previously presented) The process as claimed in claim 1 wherein the starting mixture is a gas stream which has a tendency to form reaction aerosols.
21. (previously presented) The process as claimed in claim 1 wherein the starting mixture is a gas stream which has a tendency to form sublimation aerosols.
22. (original) A process as claimed in claim 7, wherein the porosity is in arrange from 91 to 96 %.
23. (original) A process as claimed in claim 10, wherein the pressure drop is set in the range from 5 to 40 mbar.
24. (original) A process as claimed in claim 11, wherein the gaseous starting mixture and the scrubbing liquid of fed in countercurrent.

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25. (original) A separation column as claimed in claim 13, wherein the pressure drop is set in the range from 5 to 40 mbar.
26. (original) A separation column as claimed in claim 17, wherein the porosity is in the range from 91 to 96 %.
27. (original) An apparatus as claimed in claim 18, wherein the gaseous starting mixture and the scrubbing liquid are fed in countercurrent.
28. (previously presented) A method as claimed in claim 19, wherein the gas stream contains hydrogen chloride and/or hydrogen bromide, gaseous sulfur trioxide, gaseous sulfuric acid or gaseous nitrogen dioxide, and which comes into contact with aqueous solutions which contain ions produced in the absorption of the abovementioned substances in water.
29. (previously presented) A method as claimed in claim 20, wherein the starting mixture is a gas stream which contains ammonia and hydrogen chloride.